



2019-nCoV Literature Situation Report (Lit Rep)

February 7, 2020

Key Takeaways

- **Pediatric patients appear to experience milder illness and often exhibit no obvious symptoms at time of diagnosis.**
- **Several hospitals are sharing CT chest imaging to support diagnostic capacity globally.**
- **Ophthalmologists in China call for greater attention to the possibility of ocular transmission.**
- **A coronavirus genetic database has been made free online to facilitate further research into historical and global trends.**

Transmission and Global Spread

- Preparedness and vulnerability of African countries for the potential importation of 2019-nCoV is evaluated. They use air travel data from affected Chinese provinces, the WHO International Health Regulation and Monitoring and Evaluation Framework, and the Infectious Disease Vulnerability Index.
- Countries with the highest risk of importation tended to have moderate to high response capacity while those with moderate risk had varying capacity and generally high vulnerability. Specific maps illustrating importation, population density, and capacity and vulnerability factors are provided.

Gilbert et al. (Feb 7, 2020). Preparedness and vulnerability of African countries against introductions of 2019-nCoV. Pre Print downloaded Feb 7 from:

<https://www.medrxiv.org/content/10.1101/2020.02.05.20020792v1>

- Ophthalmologists in China report a case 2019-nCoV that *may* have been caused by ocular infection (eyes). Infectious droplet transmission through the conjunctival epithelium was documented previously for SARS-CoV and the authors suggest that precautions should be taken to prevent similar transmission from 2019-nCoV patients.

Lu et al. (Feb 6, 2020). 2019-nCoV transmission through the ocular surface must not be Ignored. The Lancet. [https://doi.org/10.1016/S0140-6736\(20\)30313-5](https://doi.org/10.1016/S0140-6736(20)30313-5)

Modelling and Prediction

- Researchers estimated the epidemic doubling time of the outbreak by province in mainland China. From Jan 20 – Feb 2, doubling time ranged from 1.0 day to 3.3 days, with Hubei estimated at 2.4 days. Social distancing measures appear to have been successful in slowing but not stopping epidemic growth.

Muniz-Rodriguez et al. (Feb 6, 2020). Epidemic doubling time of the 2019 novel coronavirus outbreak by province in mainland China. Pre Print downloaded Feb 7 from:

<https://www.medrxiv.org/content/10.1101/2020.02.05.20020750v2>

Clinical Characteristics and Health Care Setting

- CDC compiled information from ~650 state reports and inquiries regarding persons under investigation (PUI) for 2019-nCoV through Jan 31. Clinical characteristics, epidemiologic risk classification, setting where patient was identified, and testing results are presented.
- Of the 210 people tested, 11 (5%) tested positive for 2019-nCoV and 9 of these had travel history to Wuhan. The remaining two patients had not travelled but were in close contact with laboratory-confirmed cases. All experienced fever and cough.
- CDC recommends that clinicians remain aware of person-to-person transmission from infected travelers to close contacts without travel history.

Bajema et al. (Feb 7, 2020). Persons Evaluated for 2019 Novel Coronavirus — United States, January 2020. MMWR Early Release.

<http://dx.doi.org/10.15585/mmwr.mm6906e1external icon>

- Clinical characteristics of 138 hospitalized patients with confirmed 2019-nCoV at a single hospital are described, comparing across ICU status.
- The symptom profile is comparable to other case series reports.
- As expected, comorbidities, complications, and various treatment procedures were more common among ICU patients, who were also older on average than non-ICU patients.

Wang et al. (Feb 7, 2020). Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China. JAMA.

<https://jamanetwork.com/journals/jama/fullarticle/2761044>

- This brief correspondence provides some considerations for 2019-nCoV infection, diagnosis, and treatment during pregnancy based on experiences with MERS-CoV and SARS-CoV.

Favre et al. (Feb 6, 2020). 2019-nCoV epidemic: what about pregnancies? The Lancet.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30311-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30311-1/fulltext)

- Changes in chest CT from initial diagnosis with 2019-nCoV to subsequent imaging are described for patients at one hospital.

Pan and Guan (Feb 6, 2020). Imaging changes in patients with 2019-nCoV. European Radiology. <https://doi.org/10.1007/s00330-020-06713-z>

- Song et al. provide an overview of imaging results for 51 confirmed 2019-nCoV cases.

Song et al. (Feb 6, 2020). Emerging Coronavirus 2019-nCoV Pneumonia. Radiology.

<https://pubs.rsna.org/doi/10.1148/radiol.2020200274>

- ICU physicians in Sichuan Province developed a preparedness and response plan for handling severe cases of 2019-nCoV. They provide metrics for assessing patients and ensuring the health and safety of clinical and hospital staff.

Liao et al. (Feb 5, 2020). Novel coronavirus infection during the 2019–2020 epidemic: preparing intensive care units—the experience in Sichuan Province, China. Intensive Care Med. <https://doi.org/10.1007/s00134-020-05954-2>

- Researchers and clinicians in China and Zhejiang Province developed recommendations for the diagnosis and treatment of 2019-nCoV in children. They provide child-specific diagnostic criteria and considerations for newborns.

- Clinical presentation appears similar to adults: Pediatric patients generally present with fever, fatigue, and cough, and sometimes with congestion, runny nose, excretion, diarrhea, headache, and other symptoms.
- Most have low to moderate fever or no fever at all and mild cases tend to recover 1-2 weeks after symptom onset.
- Additional clinical recommendations are provided.
Chen et al. (Feb 2, 2020). Diagnosis and treatment recommendations for pediatric respiratory infection caused by the 2019 novel coronavirus. World Journal of Pediatrics.
<https://doi.org/10.1007/s12519-020-00345-5>
- Clinical features of 28 pediatric 2019-nCoV patients are described.
 - Age range 1 month – 17 years, all associated with family clusters. Several patients had no obvious clinical symptoms but were identified as part of close contact screening.
 - Most had mild symptoms without fever or pneumonia.
 - No severe cases or deaths have been reported.*Shen and Yang (Feb 1, 2020). Diagnosis and treatment of 2019 novel coronavirus infection in children: a pressing issue. World Journal of Pediatrics.*
<https://doi.org/10.1007/s12519-020-00344-6>

Virology

- Researchers developed an online coronavirus databases to facilitate genomics and proteomics analysis. This publicly accessible database is free to access at: <http://covdb.popgenetics.net>
Zhu et al. (Feb 7, 2020). A database resource for Genome-wide dynamics analysis of Coronaviruses on a historical and global scale. Pre Print downloaded Feb 7 from:
<https://www.biorxiv.org/content/10.1101/2020.02.05.920009v1>

Policy and Prevention

- Shortages in Australia of personal protective equipment amplified by recent brush fires draw concern from general practitioners.
Mahase (Feb 5, 2020). Novel coronavirus: Australian GPs raise concerns about shortage of face masks. BMJ. <https://doi.org/10.1136/bmj.m477>

Mental Health and Personal Impact

- An increasing number of public pleas for awareness around daily life in Wuhan in addition to the effects of quarantine on mental health globally have been published in the news in the past several days. The Lancet shares one of these personal accounts.
Horton (Feb 8, 2020). Offline: 2019-nCoV—“A desperate plea”. The Lancet.
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30299-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30299-3/fulltext)

Other Resources

- Cambridge University Press has compiled a [Coronavirus Free Access Collection](#) of articles and book chapters with relevance to 2019-nCoV.
- A [weekly epidemiological report](#) (Jan 26 – Feb 1) out of Australia describes the current state of 2019-nCoV response efforts there.

In addition to the articles described here, there are several editorials, commentaries, and technical (e.g., drug trial) papers available to view via the [2019-nCoV SharePoint site](#) along with previous Lit Reps.